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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,279	02/02/2004	Pietro Arturo Bernasconi	Bernasconi 6-4 (LCNT/1262)	2208
46363	7590	05/19/2005	EXAMINER LIN, TINA M	
MOSER, PATTERSON & SHERIDAN, LLP/ LUCENT TECHNOLOGIES, INC 595 SHREWSBURY AVENUE SHREWSBURY, NJ 07702			ART UNIT 2874	
PAPER NUMBER				

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/770,279

Applicant(s)

BERNASCONI ET AL.

Examiner

Tina M. Lin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2-2-04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/2/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

The drawings are objected to because: In Figure 1, reference numeral “NO. 5 (TM)” and “NO. 1 (TM)” are both shown to represent the TM mode component. However, in the Specification on page 6, line 19, it appears the Applicants are designating “No. 5” as a TE output and not a TM. Appropriate correction is required. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 9-11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,841 to Dingel et al.

In regards to claims 1, 3, 7, 9, 10, 11, 13 and 14, Dingel et al discloses polarization beam splitter (330) coupled to an arrayed waveguide grating, AWG, (Figure 6), where the AWG includes a star input coupler (20), a star output coupler (60) and a plurality of waveguides of unequal lengths. Dingel et al further discloses the input signal to be split by the AWG. (Column 5 Lines 55-65) But Dingel et al fails to specifically disclose the input signal to arrive at different phase fronts of a free space region at the output side of the AWG, where the AWG splits the first and second polarization components. However, Dingel et al disclose a polarization beam splitter to split the optical signal into different branches based on polarization. Therefore, although Dingel et al does not explicitly state splitting the optical signal into different polarization components, it would have been obvious at the time the invention was made to a person having ordinary skill in the art since Dingel et al does disclose a polarization beam splitter equip with the function to split an input optical signal into different breaches based on polarization.

In regards to claims 4 and 5, Dingel et al discloses an input coupler to comprise of a star coupler. But Dingel et al fails to disclose the input coupler to comprise of a slab waveguide lens. However, Dingel et al does disclose the input coupler to be a slab coupler. Furthermore, Applicant states slab waveguide lenses have substantially similar functions as a star coupler and therefore can be used in place of star couplers. (Specification, Page 4 Line 32- Page 5 Line 2) Therefore, it would have been obvious at the time the invention was made to a person having

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ordinary skill in the art to have used either a star coupler or slab waveguide lenses since Applicant states they perform the substantially the same function.

In regards to claim 6, Dingel et al discloses the apparatus to perform at least one of the wavelength multiplexing or demultiplexing for input signals.

Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,841 to Dingel et al as applied to claims 1 and 10 above, and further in view of U.S. Patent 6,853,769 to McGreer.

In regards to claims 2 and 12, Dingel et al fails to explicitly disclose the polarization components to comprise a TE mode and a TM mode. However, McGreer discloses the TE and TM polarization modes to be two principle modes. The TE and TM modes commonly exist within a signal when separating the modes by a polarization splitter. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for a signal having polarization components to have a TE mode and a TM mode.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,841 to Dingel et al as applied to claim 1 above, and further in view of U.S. Patent 5838870 to Soref.

In regards to claim 8, Dingel et al fails to disclose the polarization splitter to be fabricated from waveguides with a shallow etched buried rib structure and a thin film MQW on top of the rib structure. However, Soref discloses splitting waveguide signals where the waveguides are formed by etching and being placed in MQW layers. Therefore, since Dingel et al simply discloses a general polarization splitter and Soref discloses the details of the polarization splitter with waveguides, it would have been obvious at the time the invention was made to a person

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having ordinary skill in the art for the polarization splitter to be fabricated from waveguides with a shallow etched buried rib structure and a thin film MQW on top of the rib structure.

The documents submitted by applicant in the Information Disclosure Statement have been considered and made of record. Note attached copy of form PTO-1449.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference B discusses an arrayed waveguide with different lengths for each waveguide.

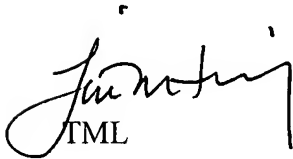
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Lin whose telephone number is (571) 272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

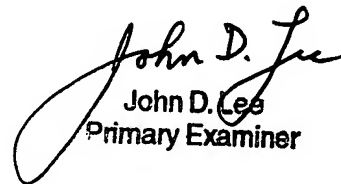
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Handwritten signature of TML.



Handwritten signature of John D. Lee.

John D. Lee
Primary Examiner